Lesson Log

**SYSTEM DESIGN & ANALYSIS**

1. Identify the relevant stakeholders when planning a new system.
2. Describe methods of obtaining requirements from stakeholders
3. Describe appropriate techniques for gathering the information needed to arrive at a workable solution
4. Construct suitable representation to illustrate system requirements
5. Describe the purpose of prototypes to demonstrate the proposed system to the client
6. Discuss the importance of iteration during the design process
7. Explain the possible consequences of failing to involve the end-user in the design process
8. Discuss the social and ethical issues associated with the introduction of the new IT systems

**Identify the relevant stakeholders when planning a new system.**

**Stakeholder:** A person with an interest or concern in something

**Three important questions:**

1. Who will the **end-user** be?

2. What are their **needs?**

3. Any other stakeholders?

**Parties involved in a system**

* System analyst
* End users
* Software manufacturers
* Client company

**Methods to obtain (Description, Advantages and Disadvantages):**

* Survey
* Interviews
* Direct observation
* Collecting documents

**Observation:**

Involves systems analyst walking around the orgs watching how things are done with his own eyes.

**Advantages:**

Possibility of gathering first-hand, unbiased information

**Disadvantage:**

Often people don’t work the way they normally do when being observed

**Interview:**

Interview key people within the system to find out how it works

**Advantages:**

Detailed information

**Disadvantages:**

Time consuming

**Survey:**

Handling out questions for people to answer

**Advantages:**

Large amount of data from a large group

Save time

Simple

**Disadvantages:**

Right questions

Not serious

Limited questions

**Collecting Documents:**

**Advantages:**

Detailed information about the person system can be gathered

It can be seen where the old system has problems

**Disadvantages:**

Time consuming

Just looking at the forms may be confusing

**Describe appropriate techniques for gathering the information needed to arrive at a workable solution**

* Examining current systems
* Looking at competing products
* Organizational capabilities
* Literature searches

Three Types of illustration:

* System flow charts:

System flowchart is the graphical representation of the flow of data in the system, and represents the work process of the system. Various symbols are used in the flowchart to designate specific actions.

* Data flow diagrams:

a graphical representation of the "flow" of data through an information system, modelling its *process* aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design).

Circle: functions

Square: input/output

* Structure Charts:

a chart which shows the breakdown of a system to its lowest manageable levels.They are used in structured programming to arrange program modules into a tree. Each module is represented by a box, which contains the module's name. The tree structure visualizes the relationships between modules.

Prototypes:

Prototypes are abstract representations of the system, often focusing on only one or two key aspects of the system

Important in testing

Example:

Shipyard building a prototype of an icebreaker ship to test

Importance of iteration:

Design Cycle:

Five stages:

* Planning
* Analysis
* Design
* Implementation
* Maintenance

Not involving the end-user = TROUBLE

Off- the-shelf software – Tailored software

System may be unsuited for user’s problem, affecting productivity

User may be unsatisfied with the system

SOCIAL & ETHICAL ISSUES

* Digital divide
* Firing workers because computer system can do the same job cheaper
* Through mobile phones with access to business IT-systems, workers can be reached even out of work-dad hangs on phone with colleagues the entire holiday
* Less social interaction dur to home offices